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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,222	02/27/2004	Toyotaka Yuasa	1021.43559X00	4833

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EXAMINER

CREPEAU, JONATHAN

ART UNIT	PAPER NUMBER
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1745

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/12/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/787,222

Applicant(s)

YUASA ET AL.

Examiner

Jonathan S. Crepeau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 5, 6 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>2/13/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-6 and 10, drawn to a lithium secondary battery, classified in class 429, subclass 231.1.
 - II. Claims 7-9, drawn to a method of manufacturing positive electrode material, classified in class 423, subclass 594.3.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed does not require Li, Ni, Mn and Co. In addition, the claimed products can be made by other processes.

3. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Alan Schiavelli on January 25, 2007 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-6 and 10.

Affirmation of this election must be made by applicant in replying to this Office action. Claims

7-9 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Objections

5. Claims 5, 6, and 10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2001-85006. In the abstract, the reference teaches a positive electrode material comprising Li, Ni, Mn, and Co. The material is in the form of primary particles coagulated into secondary particles, the secondary particles having a void percentage of 30% or less. As such, the range recited in claim 3 is believed to be anticipated.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-85006.

The reference is applied as stated above. However, the reference does not expressly teach that the length in which the primary particles are linked on the section of the secondary particle is equivalent to 10-70% of the length of the whole periphery on the section of the primary particle, as recited in claim 1.

However, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the reference would motivate the artisan to employ primary particles with relatively large portions of their surfaces touching, thereby rendering the claimed range obvious. In paragraph [0027] of the machine translation, the reference teaches that the size of the primary particle is preferably kept large so that electrical conductivity and charge/discharge capability is kept good. Further, in [0027], it appears that the size of the grain boundary of the primary particle is advantageously kept large. The artisan would be motivated by these teachings to use primary particles having large diameters such that relatively large portions of the surfaces thereof are touching each other. Accordingly, the subject matter of claim 1 would be rendered obvious.

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10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-85006 in view of Goldner et al (U.S. Patent 6,982,132) and Kizu et al (U.S. Pre-Grant Publication No. 2003/0165739).

JP '006 does not expressly teach that the crystal orientation of c axes of 60% or more of the primary particles in the secondary particle are within 20 degrees, as recited in claim 2.

Goldner et al. is directed to a thin-film battery comprising a cathode made of lithium cobaltate. As described in column 12, line 63 et seq., the material has a preferred crystallographic orientation of the (003) plane being perpendicular to the cathode/electrolyte interface.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to orient the primary particles of JP '006 such that the majority of particles exhibit an (003) plane being perpendicular to the electrolyte interface. It is noted that the "c-axis" of the lithium cobaltate of Goldner et al. passes orthogonally through the (003) planes, as shown on the front of the Kizu publication. As described in Goldner, this crystallographic orientation provides optimum lithium transport and allows for preferred lithium ion transport in the cell. Applying these teachings to the primary/secondary particle configuration of JP '006, it would be obvious to orient the primary particles such that a majority exhibited the lithium ion diffusion direction disclosed by Goldner. Therefore, the recitation that the crystal orientation of c axes of 60% or more of the primary particles in the secondary particle are within 20 degrees would be rendered obvious to the skilled artisan.

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Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan, can be reached at (571) 272-1292. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Crepeau
Primary Examiner
Art Unit 1745
February 5, 2007